

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/069442 A1

(51) International Patent Classification⁷: **H01Q 11/12**,
9/00, 21/00

(74) Agent: **LONG, Daniel, J.**; Bae Systems Information and
Electronic Systems Integration Inc., 65 Spit Brook Road,
NHQ01-719, Nashua, NH 03061 (US).

(21) International Application Number:
PCT/US2003/041777

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:
31 December 2003 (31.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (*for all designated States except US*): **BAE
SYSTEMS INFORMATION AND ELECTRONIC
SYSTEMS INTEGRATION INC.** [US/US]; 65 Spit
Brook Road, NHQ01-719, Nashua, NH 03061 (US).

(84) Designated States (*regional*): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

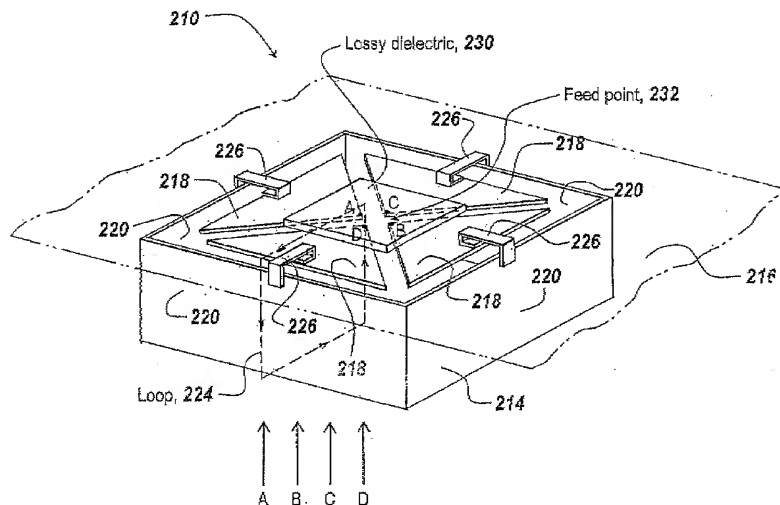
(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **APOSTOLOS, John,**
T. [US/US]; 3 Majestic Lane, Merrimack, NH 03054 (US).

Published:
— with international search report

[Continued on next page]

(54) Title: CAVITY EMBEDDED MEANDER LINE LOADED ANTENNA AND METHOD AND APPARATUS FOR LIMIT-
ING VSWR



(57) Abstract: A wideband meander line loaded antenna is configured to be flush mounted to a conductive surface serving as a ground plane by embedding the meander line components within a conductive cavity surrounded at its top edge by the ground plane. The antenna thus looks out of a cavity recessed in the surface. By permitting flush mounting the meander line antenna, not only can the antenna dimensions be minimized due to the use of the meander line loaded antenna configuration, but in aircraft applications no part of the antenna exists above the skin of the aircraft, thereby to minimize turbulent flow. Also disclosed is a method and apparatus in which a lossy dielectric is placed across the feed points of a loop type meander line loaded antenna to markedly decrease the VSWR to below 3:1, thus to increase the bandwidth of a relatively wideband 3:1 meander line loaded antenna to 6:1.

WO 2005/069442 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.